UNITED STATES PATENT AND TRADEMARK OFFICE

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09/908,998	07/18/2001	Robert J. Anderson	TPI-0329	8748

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EXAMINER
PHAN, HUY Q

ART UNIT	PAPER NUMBER
2685	

DATE MAILED: 06/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/908,998	ANDERSON ET AL.
	Examiner	Art Unit	
	Huy Q Phan	2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 July 2001*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-43* is/are pending in the application.

  4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-43* is/are rejected.

7)☒ Claim(s) *13-16, 21, 36, 39, 40, 43* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

  a)☐ All   b)☐ Some * c)☐ None of:

  1.☐ Certified copies of the priority documents have been received.

  2.☐ Certified copies of the priority documents have been received in Application No. _____.

  3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
  application from the International Bureau (PCT Rule 17.2(a)).

  * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date *6,7,9,10*.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____ .

DETAILED ACTION

Claim Objections

1.   Claims 13-16 are objected to under 37 CFR 1.75(c) as being in improper form

because a multiple dependent claim should refer to other claims in the alternative only.

See MPEP § 608.01(n). Accordingly, the claims 13-16 have not been further treated on

the merits.

For examining purpose, the examiner assumes claims 13-16 being directly

depended on claim 12.

Claims 21, 36, 39, 40, 43 are objected to because of the following informalities:

"and/or" should be changed to either - -and- - or - - or- -. Appropriate correction is

required.

For examining purpose, the examiner assumes that "and/or" has been changed

to "and".

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of
> making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the
> art to which it pertains, or with which it is most nearly connected, to make and use the same and shall
> set forth the best mode contemplated by the inventor of carrying out his invention. ·

Claims 3 and 28 are rejected under 35 U.S.C. 112, first paragraph, as failing to

comply with the written description requirement. The claims 3 and 28 contain subject

matter "a priori" which was not described in the specification in such a way as to

reasonably convey to one skilled in the relevant art that the inventor(s), at the time the

application was filed, had possession of the claimed invention.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4.   Claims 1 and 3-10 are rejected under 35 U.S.C. 102(e) as being anticipated by

Timothy et al. (US-6,366,240).

Regarding claim 1, Timothy et al. discloses in figure 1, a method used in locating

a mobile transmitter (10) for improving a time difference of arrival (TDOA) estimate

produced by cross-correlating (col. 1, line 61-col. 2, line 4) a reference signal with a

cooperating signal, using either a time-domain cross-correlation or frequency-domain

cross-spectrum process (col. 2, lines 4-10), wherein the reference signal is a copy of a

first signal transmitted by the mobile transmitter as received at a first antenna (12) (col.

3, lines 11-35) and the cooperating signal is a copy of the first signal transmitted by the

mobile transmitter (10) as received at a second antenna (14) (col. 3, lines 11-35),

comprising the steps of:

a) determining a most likely range of TDOA estimates (col. 5, line 1-col. 7, line 27);

b) searching the cross-correlation results only within the most likely range of TDOA estimates (col. 5, line 1-col. 7, line 27); and

c) estimating the TDOA to be the value within the most likely range that is associated with an optimal value of the magnitude of the cross-correlation (col. 5, line 1-col. 7, line 27).

Regarding claim 3, Timothy et al. disclose a method as recited in the rejection of claim 1, wherein the most likely range of TDOA estimates is determined as corresponding to only an area in which the mobile transmitter is a priori known to be located (col. 3, lines 36-54).

Regarding claim 4, Timothy et al. disclose a method as recited in the rejection of claim 1, wherein the optimal value is the highest magnitude peak of the time-domain cross-correlation or equivalent frequency-domain cross-spectrum process (col. 5, line 1-col. 7, line 27).

Regarding claim 5, Timothy et al. disclose a method as recited in the rejection of claim 1, wherein the optimal value is the earliest point in time when the magnitude of the time-domain cross-correlation or equivalent frequency-domain cross spectrum process is no less than a predetermined proportion of the highest magnitude peak of the time-

domain cross-correlation or equivalent frequency-domain cross-spectrum process (col. 5, line 1-col. 7, line 27).

Regarding claim 6, Timothy et al. disclose a method as recited in the rejection of claim 1, wherein the optimal value is the earliest point in time when the magnitude of the time-domain cross-correlation or equivalent frequency-domain cross-spectrum process is no less than a predetermined proportion of the average noise level (col. 5, line 53-col. 6, line 22).

Regarding claim 7, Timothy et al. disclose a method as recited in the rejection of claim 1, wherein the mostly like range of TDOA estimates is further limited so as to correspond to an area within a predetermined distance from the first antenna receiving the reference signal (col. 2, lines 11-25).

Regarding claim 8, Timothy et al. disclose a method as recited in the rejection of claim 1, wherein the mostly like range of TDOA estimates is further limited so as to correspond to an area within a predetermined distance from the second antenna receiving the cooperating signal (col. 2, lines 11-25).

Regarding claim 9, Timothy et al. disclose a method as recited in the rejections of claims 7 or 8, wherein the predetermined distance is determined using a round trip delay measurement (col. 6, lines 23-54).

Regarding claim 10, Timothy et al. disclose a method as recited in the rejection

of claims 7 or 8, wherein the predetermined distance is determined by measuring the

received power of the mobile phone at the first and second antennas (col. 6, lines 11-

22).

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6.   Claims 11, 12, 21-25 and 36-43 are rejected under 35 U.S.C. 102(b) as being

anticipated by DesJardins (US-5,570,099).

Regarding claim 11, DesJardins discloses in figure 2, a method used in locating

a mobile transmitter (13) for improving a time difference of arrival (TDOA) estimate

produced by cross-correlating (110) (col. 4, lines 50-53) a reference signal with a

cooperating signal, using either a time-domain cross-correlation or equivalent

frequency-domain cross-spectrum process, wherein either process requires the

simultaneous solution of both frequency difference of arrival (FDOA) and TDOA (col. 4,

lines 29-34), wherein the reference signal is a copy of a first signal transmitted by the

mobile transmitter as received at a first antenna (col. 9, lines 30-31 and col. 3, lines 35-

59) and the cooperating signal is a copy of the first signal transmitted by the mobile

transmitter as received at a second antenna (col. 3, lines 35-59), comprising the steps

of:

a) determining a most likely range of FDOA estimates (col. 5, lines 15-45);

b) determining a most likely range of TDOA estimates (col. 5, lines 15-45);

c) searching the cross-correlation results only within the most likely range of

TDOA and FDOA estimates (col. 5, lines 15-45);

d) estimating the TDOA to be the value within the most likely range that is

associated with an optimal value of the magnitude of the cross-correlation (col. 5, line

15-col. 6, line 67).

Regarding claim 12, DesJardins discloses a method as recited in the rejection of

claim 11, wherein the most likely range of FDOA estimates is limited to the frequency

values (col. 5, lines 21-25) associated with a stationary or nearly stationary mobile

transmitter (col. 3, lines 35-38).

Regarding claim 21, DesJardins discloses in figure 2, a method used in locating

a mobile transmitter (13), comprising:

a) providing a set of cross-correlation values (110) (col. 4, lines 50-53), wherein

each cross-correlation value is associated with a corresponding TDOA and FDOA

estimate (col. 4, lines 30-34) and is produced by cross-correlating a reference signal

with a cooperating signal, the reference signal comprising a copy of a signal transmitted

by the mobile transmitter as received at a first antenna (col. 9, lines 30-31 and col. 3,

lines 35-59) and the cooperating signal comprising a copy of the signal transmitted by

the mobile transmitter as received at a second antenna (col. 3, lines 35-59);

b) determining a most likely range of TDOA and FDOA estimates (col. 5, lines

15-45);

c) identifying an optimal cross-correlation value within a subset of cross-

correlation values (110) (col. 4, lines 50-53) corresponding to the most likely range of

TDOA and FDOA estimates (col. 5, lines 15-45); and

d) employing the TDOA and FDOA value corresponding to the optimal cross-

correlation value in calculating the location of the mobile transmitter (col. 4, line 54-col.

6, line 67).

Regarding claim 22, DesJardins discloses a method as recited in the rejection of

claim 21, wherein the cross-correlating (110) (col. 4, lines 52-53) comprises cross-

correlating in the time-domain (col. 4, lines 30-34 and col. 5, lines 21-25).

Regarding claim 23, DesJardins discloses a method as recited in the rejection of

claim 21, wherein the cross-correlating (110) (col. 4, lines 52-53) comprises cross-

correlating in the frequency-domain (col. 4, lines 30-34 and col. 5, lines 21-25).

Regarding claim 24, DesJardins discloses a method as recited in the rejection of

claim 21, wherein the most likely range of TDOA estimates is based upon a rough

estimate of the location of the mobile transmitter (col. 5, lines 36-43).

Regarding claim 25, DesJardins discloses a method as recited in the rejection of claim 21, wherein the most likely range of FDOA estimates is based upon a rough estimate of the speed of the mobile transmitter (col. 5, lines 36-43).

Regarding claim 36, DesJardins discloses in figure 2, a Wireless Location System (WLS) for locating a mobile transmitter (13), comprising:

a) means for determining a most likely range of TDOA and FDOA estimates (col. 5, lines 15-45); and

b) means for identifying an optimal cross-correlation value within a subset of cross-correlation values (110) (col. 4, lines 50-53) corresponding to the most likely range of TDOA and FDOA estimates (col. 5, lines 15-45), said subset of cross-correlation values being contained within a set of cross-correlation values, wherein each cross-correlation value in the set is associated with a corresponding TDOA and FDOA estimate (col. 4, line 54-col. 6, line 67).

Regarding claim 40, DesJardins discloses in figure 2, a method for use in a Wireless Location System (WLS) for locating a mobile transmitter (13), comprising:

a) determining a most likely range of TDOA and FDOA estimates (col. 5, lines 15-45); and

b) identifying an optimal cross-correlation value within a subset of cross-correlation values (110) (col. 4, lines 50-53) corresponding to the most likely range of

TDOA and FDOA estimates (col. 5, lines 15-45), said subset of cross-correlation values

being contained within a set of cross-correlation values, wherein each cross-correlation

value in the set is associated with a corresponding TDOA and/or FDOA estimate (col. 4,

line 54-col. 6, line 67).

Regarding claims 37 and 41, DesJardins discloses a system and a method as

recited in the rejections of claims 36 and 40 respectively, wherein each value in said set

of cross-correlation values and is representative of a cross-correlation, in the time or

frequency domain, of a reference signal with a cooperating signal (col. 3, lines 35-59).

Regarding claims 38 and 42, DesJardins discloses a system and a method as

recited in the rejections of claims 37 and 41 respectively, wherein the reference signal

comprises a copy of a signal transmitted by the mobile transmitter as received at a first

antenna (col. 9, lines 30-31 and col. 3, lines 35-59) and the cooperating signal

comprises a copy of the signal transmitted by the mobile transmitter as received at a

second antenna (col. 9, lines 30-31 and col. 3, lines 35-59).

Regarding claims 39 and 43, DesJardins discloses a system and a method as

recited in the rejections of claims 36 and 40 respectively, further comprising means for

employing the TDOA and FDOA value (col. 4, lines 30-34) corresponding to the optimal

cross-correlation value (110) (col. 4, lines 50-53) in calculating the location of the mobile

transmitter (col. 5, lines 15-45).

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8.   Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Timothy

et al. in view of DesJardins.

Regarding claim 2, Timothy et al. disclose a method as recited in the rejections of

claim 1. Timothy et al. further disclose in figure 1, wherein the most likely range of

TDOA estimates is limited to time values associated with the distance (col. 1, lines 50-

51) between the first antenna at which the reference signal was received and the

second antenna at which the cooperating signal was received (col. 2, lines 5-10). But,

Timothy et al. do not particularly disclose wherein the most likely range of TDOA

estimates is limited to time values associated with a predetermined error value.

However in analogous art, DesJardins teaches wherein the most likely range of TDOA

estimates is limited to time values associated with a predetermined error value (col. 5,

lines 11-19). Since, Timothy et al. and DesJardins are related to a method used in

locating a mobile transmitter; therefore, it would have been obvious to one of ordinary

skill in the art at the time the invention was made to modify the method of Timothy et al.

by specifically having wherein the most likely range of TDOA estimates is limited to time

values associated with a predetermined error value as taught by DesJardins for purpose of improving the accuracy and speeding up the process of locating a mobile transmitter.

9.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10.   Claims 13-20 and 26-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over DesJardins in view of Timothy et al.

Regarding claim 13, DesJardins discloses a method as recited in the rejection of claim 12. DesJardins further discloses wherein the most likely range of TDOA estimates is limited to time values associated with a predetermined error value (col. 5, lines 11-19). But, DesJardins does not particularly disclose wherein the most likely range of TDOA estimates is limited to time values associated with the distance between the first antenna at which the reference signal was received and the second antenna at which the cooperating signal was received. However in analogous art, Timothy et al. teach wherein the most likely range of TDOA estimates is limited to time values associated with the distance (col. 1, lines 50-51) between the first antenna at which the reference signal was received and the second antenna at which the cooperating signal was received (col. 1, lines 44-60). Since, DesJardins and Timothy et al. are related to a method used in locating a mobile transmitter; therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method

of DesJardins by specifically having wherein the most likely range of TDOA estimates is

limited to time values associated with the distance between the first antenna at which

the reference signal was received and the second antenna at which the cooperating

signal was received as taught by Timothy et al. for purpose of improving the cost

(eliminating the high gain antennas and expensive atomic clocks) the accuracy (based

on the known distance between antennas) and speeding up (preventing the correlation

of long blocks of data) the process of locating a mobile transmitter.

Regarding claim 14, DesJardins discloses a method as recited in the rejection of

claim 12. But, DesJardins does not particularly disclose wherein the optimal value is the

highest magnitude peak of the time-domain cross-correlation or equivalent frequency-

domain cross-spectrum process. However, Timothy et al. teach wherein the optimal

value is the highest magnitude peak of the time-domain cross-correlation or equivalent

frequency-domain cross-spectrum process (col. 5, line 1-col. 7, line 27).

Regarding claim 15, DesJardins discloses a method as recited in the rejections

of claim 12. But, DesJardins does not particularly disclose wherein the optimal value is

the earliest point in time when the magnitude of the time-domain cross-correlation or

equivalent frequency-domain cross spectrum process is no less than a predetermined

proportion of the highest magnitude peak of the time-domain cross-correlation or

equivalent frequency-domain cross-spectrum process. However, Timothy et al. teach

wherein the optimal value is the earliest point in time when the magnitude of the time-

domain cross-correlation or equivalent frequency-domain cross spectrum process is no

less than a predetermined proportion of the highest magnitude peak of the time-domain

cross-correlation or equivalent frequency-domain cross-spectrum process (col. 5, line 1-

col. 7, line 27)

Regarding claim 16, DesJardins discloses a method as recited in the rejection of

claim 12. But, DesJardins does not particularly disclose wherein the optimal value is the

earliest point in time when the magnitude of the time-domain cross-correlation or

equivalent frequency-domain cross-spectrum process is no less than a predetermined

proportion of the average noise level. However, Timothy et al. teach wherein the optimal

value is the earliest point in time when the magnitude of the time-domain cross-

correlation or equivalent frequency-domain cross-spectrum process is no less than a

predetermined proportion of the average noise level (col. 5, line 53-col. 6, line 22).

Regarding claims 17 and 32, DesJardins discloses a method as recited in the

rejections of claims 12 and 24 respectively. But, DesJardins fails to expressly show

wherein the mostly like range of TDOA estimates is further limited so as to correspond

to an area within a predetermined distance from the first antenna receiving the

reference signal. However, Timothy et al. teaches wherein the mostly like range of

TDOA estimates is further limited so as to correspond to an area within a predetermined

distance from the first antenna receiving the reference signal (col. 2, lines 11-25). Since,

DesJardins and Timothy et al. are related to a method used in locating a mobile

transmitter; therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of DesJardins by specifically having wherein the mostly like range of TDOA estimates is further limited so as to correspond to an area within a predetermined distance from the first antenna receiving the reference signal as taught by Timothy et al. for purpose of improving the cost (eliminating the high gain antennas and expensive atomic clocks), the accuracy (based on the known distance) and speeding up the process of locating a mobile transmitter.

Regarding claims 18 and 33, DesJardins discloses a method as recited in the rejections of claims 12 and 24 respectively. But, DesJardins does not explicitly show wherein the mostly like range of TDOA estimates is further limited so as to correspond to an area within a predetermined distance from the second antenna receiving the cooperating signal. However, Timothy et al. teaches wherein the mostly like range of TDOA estimates is further limited so as to correspond to an area within a predetermined distance from the second antenna receiving the cooperating signal (col. 2, lines 11-25). Since, DesJardins and Timothy et al. are related to a method used in locating a mobile transmitter; therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of DesJardins by specifically having wherein the mostly like range of TDOA estimates is further limited so as to correspond to an area within a predetermined distance from the second antenna receiving the cooperating signal as taught by Timothy et al. for purpose of improving the cost (eliminating the high gain antennas and expensive atomic clocks), the accuracy (based

on the known distance) and speeding up the process of locating a mobile transmitter.

Regarding claims 19 and 34, DesJardins and Timothy et al. disclose a method as recited in the rejections of claims 17 or 18 and 32 or 33 respectively. Timothy et al. further disclose wherein the predetermined distance is determined using a round trip delay measurement (col. 6, lines 23-54).

Regarding claims 20 and 35, DesJardins and Timothy et al. disclose a method as recited in the rejections of claims 17 or 18 and 32 or 33 respectively. Timothy et al. further disclose wherein the predetermined distance is determined by measuring the received power of the mobile phone at the first and second antennas (col. 6, lines 11-22).

Regarding claim 26, DesJardins discloses a method as recited in the rejection of claim 24. But, DesJardins does not particularly disclose wherein the rough estimate is based at least in part on the distance between the first and second antennas. However, Timothy et al. teach wherein the rough estimate is based at least in part on the distance between the first and second antennas (col. 1, lines 44-60).

Regarding claim 27, DesJardins and Timothy et al. disclose a method as recited in the rejection of claim 26. DesJardins further discloses wherein the rough estimate is further based on a predetermined error value (col. 5, lines 11-20).

Regarding claim 28, DesJardins discloses a method as recited in the rejection of claim 24. DesJardins fails to expressly show wherein the rough estimate is based on an area in which the mobile transmitter is a priori known to be located. However, Timothy et al. teaches wherein the rough estimate is based on an area in which the mobile transmitter is a priori known to be located (col. 3, lines 36-54).

Regarding claim 29, DesJardins discloses a method as recited in the rejection of claim 21. DesJardins do not particularly show wherein the cross-correlation value having the largest peak magnitude within said subset of cross-correlation values is identified as the optimal cross-correlation value. However, Timothy et al. teaches wherein the cross-correlation value having the largest peak magnitude within said subset of cross-correlation values is identified as the optimal cross-correlation value (col. 5, line 1-col. 7, line 27).

Regarding claim 30, DesJardins discloses a method as recited in the rejection of claim 21. DesJardins fails to expressly show the method comprising identifying, as the optimal cross-correlation value, the value within said subset of cross-correlation values having the smallest associated TDOA estimate for which the magnitude is no less than a predetermined proportion of the largest peak magnitude. However, Timothy et al. teaches a method comprising identifying, as the optimal cross-correlation value, the value within said subset of cross-correlation values having the smallest associated

TDOA estimate for which the magnitude is no less than a predetermined proportion of the largest peak magnitude (col. 5, line 1-col. 7, line 27).

Regarding claim 31, DesJardins discloses a method as recited in the rejection of claim 21. DesJardins does not explicitly show the method comprising identifying, as the optimal cross-correlation value, the value within said subset of cross-correlation values having the smallest associated TDOA estimate for which the magnitude is no less than a predetermined proportion of an average noise level. However, Timothy et al. teaches a method comprising identifying, as the optimal cross-correlation value, the value within said subset of cross-correlation values having the smallest associated TDOA estimate for which the magnitude is no less than a predetermined proportion of an average noise level (col. 5, line 1-col. 7, line 27).

Conclusion

11.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

      a) Larsson et al. (US-6,522,887) disclose method for measurement TDOA of a mobile station.

      b) Vannucci (US-6,381,464) discloses mobile location estimation.

      c) Fattouche et al. (US-6,330,452) disclose a network-based WLS.

      d) Maloney et al. (US-6,546,256) disclose location-related measurement.

12.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Huy Q Phan whose telephone number is 703-305-9007.

The examiner can normally be reached on 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Urban F Edward can be reached on 703-305-4385. The fax phone number

for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Phan, Huy Q   AU: 2685   May 18, 2004

EDWARD F. URBAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600